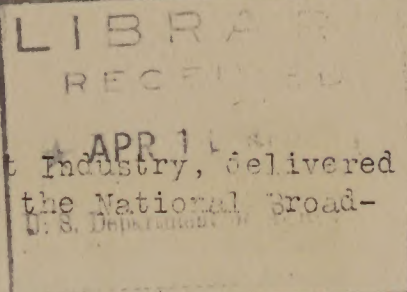


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ALFALFA HUNTING IN CENTRAL ASIA

A radio talk by Mr. H. L. Westover, Bureau of Plant Industry, delivered through Station WRC and 34 other stations associated with the National Broadcasting Company, April 3, 1930.

During the past few years there has developed in some of the best alfalfa growing districts in the Middle West a rather serious disease of alfalfa known as bacterial wilt. The losses from this disease have been so great that the farmers have become very much alarmed. Last winter, through the efforts of individual farmers and farmers' organizations, a special appropriation was made to defray the expenses of a trip to Europe and Asia for the purpose of obtaining seed that might be resistant to the wilt, inasmuch as preliminary tests had indicated that certain lots of alfalfa from Turkestan and France were more or less resistant to the disease. Today, I shall give you an account of our alfalfa hunting expedition.

Dr. W. E. Whitehouse and I proceeded from New York to Leningrad by way of Paris and Berlin. After visiting agricultural institutions and experiment stations in the vicinity of Leningrad, we continued the journey to Kiev, Kharkov, Saratov, Samara and thence to Turkestan, the principal object of the trip. Experiment stations are located at the various cities mentioned, and some very interesting work is being carried on at these stations, and on a rather extensive scale. The tests include such crops as sugar beets, small grains, sunflowers and alfalfa.

Arriving at Tashkent, the capital of Turkestan, we visited several nearby experiment stations and spent a most interesting day in the market or bazaar in the old city where we obtained several samples of alfalfa seed as well as seed of some of the vegetables and fruits commonly grown in that region. These bazaars in the native cities are most interesting. Small shops, seldom more than ten feet square, front directly on the narrow, crooked and dirty streets. The merchant usually sits on the ground or mud floor in the midst of his wares so that he can wait on his customers without changing his position. The continual hubbub created by the drivers of camels and horses to clear the streets of pedestrians and the noisy bargaining of the merchants is almost deafening. The wares displayed are quite unusual to foreigners and very interesting. In spite of the unsanitary conditions, the filth, and the noise, these bazaars are most fascinating, but at the present rate of progress, in a few years they will be a thing of the past.

The natives in this vicinity are largely Kirghiz and Uzbek. The Kirghiz are the nomads. They live in small circular huts called Urtas, and move from place to place to find pasture for their stock. The hut and all its contents can be loaded on the back of one camel, the women doing most of this work. The Russian Government has made an effort to persuade the Kirghiz to settle down to farming, but with little success. The Uzbeks have fixed places of abode and are considered some of the best native farmers of Turkestan.

From Tashkent we proceeded by train to Frunze in Northeast Turkestan, and from this point by automobile truck to Alma Ata. The trip, made at night over rough, dusty roads was anything but enjoyable. From Alma Ata access is easy to the Tian Shan Mountains where we were able to collect seed of wild alfalfas, grasses, and miscellaneous legumes. Through the kindness of a cooperative seed organization located here we were enabled to proceed eastward by automobile almost to the Chinese boundary. In this region there is a vast strip of country with fairly uniform topography and rich soil. Under irrigation it could feed an



enormous population. Unfortunately, the scant water supply limits farming to relatively small areas known as oases. Many of the farmers in this region are Russians, others include Taranchis, who are Mongolians, some Uzbek, and a few Kirghiz. Most of these farmers grow alfalfa and produce a small amount of seed each year. We obtained samples of seed from a number of these cases.

Returning from northeast Turkestan to Tashkent, we proceeded to Fergana, located in a very productive valley of southeast Turkestan. Here we procured additional samples of seed from the native bazaars and from some of the peasants, and then continued our journey by train to Samarkand, probably the most famous city of the whole of Turkestan. From here we traveled by horse and wagon over hot, dusty roads, to the mountains to the southeast, obtaining several samples of seed along the road.

Another trip was made in an automobile furnished by the Cotton Committee, a very influential Government organization, to important seed producing districts northeast of Samarkand. We then proceeded westward by train to Bokhara, a city which foreigners were seldom permitted to enter until a few years ago. Through the courtesy of the Military Department we obtained an automobile which we used to visit some of the alfalfa seed producing districts and to secure samples of seed.

The next stage of our journey carried us by train to Chardjui, in the heart of the melon-producing district of Turkestan. Here we engaged a twelve-wheeled automobile constructed especially for desert use, and started upon the most interesting part of our travels in Turkestan. We proceeded northward across the great Karakum Desert to the irrigated district in the vicinity of Khiva. The soil in this region is very productive and some very fine fields of alfalfa, cotton and sorghum were to be seen. The military officer presiding over this region tried to dissuade us from going any farther north as the bandits were bad and he feared that something would happen to the American in the party. When we insisted on proceeding, he finally gave his consent on the condition that we take two soldiers and all go armed. Thus we started out with one Russian and one Turkoman soldier and each member of the party carrying an army rifle and ammunition loaned to us by the War Department.

We passed through many villages where an automobile had never been before and needless to say our appearance excited much interest among the natives. As soon as we entered a village, all the men and children flocked around the automobile, and when we left, the entire population, exclusive of the women who are not much in evidence, followed the automobile, regardless of the cloud of dust that we kicked up, until we passed from view. The teachers in one village had lined the school children up along the street to greet us as we passed.

We had much difficulty in making arrangements to have the automobile ferried across the Amu Daria. We passed over numerous bridges which looked so weak that I held my breath until we were safely across. These crude bridges had been constructed for two-wheeled carts and never intended for a heavy automobile like ours.

While we encountered no bandits on the trip we passed near several villages that had been plundered and people killed, and one day we met a camel caravan that had been previously attacked. We procured a large number of samples of seed from this general region.



Returning to Chardjui, we continued westward by train to the Caspian Sea and from thence to Moscow.

The natives of Turkestan for the most part are still living under very primitive conditions. The houses are constructed of mud and the buildings and grounds are often surrounded by massive mud walls. The plow most generally used is a crooked stick with a metal point. The alfalfa is harvested with a sickle. As a rule, it is cut rather close to the ground. In some districts it is actually cut below the surface of the soil so that not a vestige of anything green is to be seen in a newly harvested field until new shoots have pushed their way through the soil. The hay is tied in bundles somewhat smaller than an ordinary bundle of grain, and is sold either green or dry. Peasants often travel miles to market with ten or twelve such bundles which bring the equivalent of four or five cents, American Money, each. Alfalfa seed is produced in numerous small patches. It is trampled out by horses and cleaned by the wind. A peasant seldom has more than seventy-five or one-hundred pounds for sale. Recently some cooperative organizations have been formed in the principal seed producing districts. These organizations have the machinery for cleaning the seed thoroughly before it goes to market.

There is quite a variation in the types of alfalfa found in various parts of Turkestan. Near the Aral Sea the winters are rather severe and in habit of growth the alfalfa in that region has the characteristics of our hardy alfalfas, such as Grimm and Ontario Variegated. Near the Persian border the winters are comparatively mild and the alfalfa generally found there has small crowns with comparatively few shoots, like our Arizona Common, and is said not to be winter hardy. Between these two extremes may be found other types intermediate in resistance to cold. In addition to the forms found under cultivation, wild types of both yellow and purple flowered alfalfas are quite common in the mountains, but in their present form these are of little agricultural value though it is hoped that they can be used for breeding purposes.

About 500 samples of seed were collected in Russia and Turkestan, including more than 125 lots of alfalfa. The quantity obtained in each case was rather limited being only sufficient for testing at our experiment stations, and no seed is available for general distribution. Should any of this seed prove especially suited to any part of the United States, or especially resistant to the disease, it can then be increased or additional quantities can be obtained from the same source.



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The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The second part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The third part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The fourth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The fifth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The sixth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The seventh part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The eighth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The ninth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The tenth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science.